

1 **IN THE CLAIMS:**

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3 In the following, Claims 1-4 are amended herein. Claims
4 5 and 6 have not been amended and are the original claims as
5 filed in the USPTO.

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7 Please amend the claims as follows:

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9 Claim 1 (Currently Amended). An apparatus comprising
10 an electrically heated composite umbilical means installed
11 within a subsea flowline containing produced hydrocarbons as
12 an immersion heater means to prevent waxes and hydrates from
13 forming within said flowline and blocking said flowline,
14 whereby said electrically heated composite umbilical means
15 possesses at least one electrical conductor disposed within
16 said composite umbilical means that conducts electrical
17 current that is used to heat said electrically heated
18 composite umbilical means within said subsea flowline
19 , whereby said electrical conductor is surrounded by a
20 composite material, and whereby said composite material is
21 comprised of fibers of high strength embedded in a matrix
22 material, whereby said fibers are selected from carbon
23 fibers, aramid fibers and glass fibers, and whereby said
24 matrix material is selected from thermoset resins and
25 thermoplastic resins, whereby said thermoset resins include
26 epoxy and vinyl ester, and whereby said thermoplastic resins
27 include PEEK, PEKK, and nylon.

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30 Claim 2 (Currently Amended). A method of installing an
31 electrically heated composite umbilical means within a
32 previously existing subsea flowline containing produced
33 hydrocarbons to make an immersion heater means to prevent

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1 waxes and hydrates from forming within said flowline and
2 blocking said flowline , whereby said electrically heated
3 composite umbilical means possesses at least one electrical
4 conductor disposed within said composite umbilical means that
5 conducts electrical current that is used to heat said
6 electrically heated composite umbilical means, whereby said
7 electrical conductor is surrounded by a composite material,
8 and whereby said composite material is comprised of fibers of
9 high strength embedded in a matrix material, whereby said
10 fibers include carbon fibers, aramid fibers and glass fibers,
11 and whereby said matrix material includes thermoset resins
12 and thermoplastic resins, whereby said thermoset resins
13 include epoxy and vinyl ester, and whereby said thermoplastic
14 resins include PEEK, PEKK, and nylon.

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17 Claim 3 (Currently Amended). A method of using an
18 umbilical conveyance means to convey into an existing subsea
19 flowline possessing produced hydrocarbons an electrically
20 heated composite umbilical means used as an immersion heating
21 means to prevent waxes and hydrates from forming within said
22 flowline and blocking said flowline , whereby said
23 electrically heated composite umbilical means possesses at
24 least one electrical conductor disposed within said composite
25 umbilical means that conducts electrical current that is used
26 to heat said electrically heated composite umbilical means,
27 whereby said electrical conductor is surrounded by a
28 composite material, and whereby said composite material is
29 comprised of fibers of high strength embedded in a matrix
30 material, whereby said fibers include carbon fibers, aramid
31 fibers and glass fibers, and whereby said matrix material
32 includes thermoset resins and thermoplastic resins, whereby
33 said thermoset resins include epoxy and vinyl ester, and

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1 whereby said thermoplastic resins include PEEK, PEKK,
2 and nylon.

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5 Claim 4 (Currently Amended). A method of using an
6 umbilical conveyance means to convey into an existing subsea
7 flowline containing produced hydrocarbons an electrically
8 heated umbilical means used as an immersion heating means to
9 prevent waxes and hydrates from forming within said flowline
10 and blocking said flowline , whereby said electrically
11 heated composite umbilical means possesses at least one
12 electrical conductor disposed within said composite umbilical
13 means that conducts electrical current that is used to heat
14 said electrically heated composite umbilical means, whereby
15 said electrical conductor is surrounded by a composite
16 material, and whereby said composite material is comprised of
17 fibers of high strength embedded in a matrix material,
18 whereby said fibers include carbon fibers, aramid fibers and
19 glass fibers, and whereby said matrix material includes
20 thermoset resins and thermoplastic resins, whereby said
21 thermoset resins include epoxy and vinyl ester, and whereby
22 said thermoplastic resins include PEEK, PEKK, and nylon.

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25 Claim 5. (Original) A method of providing artificial
26 lift to produced hydrocarbons within a subsea flowline
27 comprising at least the steps of:

28 (a) attaching a progressing cavity pump to an electric
29 motor to make an electrically energized pump;

30 (b) attaching said electrically energized pump to
31 to a first end of a tubular composite umbilical possessing a
32 multiplicity of electrical conductors within the wall of said
33 tubular composite umbilical;

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1 (c) conveying into said flowline said electrically
2 energized pump attached to said first end of said composite
3 tubular umbilical;

4 (d) using first and second of said multiplicity of
5 electrical conductors to electrically heat said composite
6 umbilical to prevent waxes and hydrates from blocking the
7 flow of said produced hydrocarbons within said flowline; and

8 (e) using at least third and fourth electrical
9 conductors of said multiplicity of electrical conductors to
10 provide electrical energy to said electrically energized
11 pump, whereby said progressing cavity pump provides
12 artificial lift to said produced hydrocarbons within said
13 subsea flowline.

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16 Claim 6. (Original) A method of providing artificial
17 lift to produced hydrocarbons within a subsea flowline
18 comprising at least the steps of:

19 (a) attaching a hydraulic pump to an electric motor to
20 make an electrically energized pump;

21 (b) attaching said electrically energized pump to
22 to a first end of a tubular composite umbilical possessing a
23 multiplicity of electrical conductors within the wall of said
24 tubular composite umbilical;

25 (c) conveying into said flowline said electrically
26 energized pump attached to said first end of said composite
27 tubular umbilical;

28 (d) using first and second of said multiplicity of
29 electrical conductors to electrically heat said composite
30 umbilical to prevent waxes and hydrates from blocking the
31 flow of said produced hydrocarbons within said flowline; and

32 (e) using at least third and fourth electrical
33 conductors of said multiplicity of electrical conductors to

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1 provide electrical energy to said electrically energized
2 pump, whereby said electrically energized pump provides
3 artificial lift to said produced hydrocarbons within said
4 subsea flowline.
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